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ABSTRACT

A study team researched impediments to the use of modern skill training methods in construction that have been caused by the U.S. Department of Labor. The problem that the study sought to define was whether the Labor Department impedes use of training innovations through the combined effect of the regulations promulgated by its Bureau of Apprenticeship and Training (BAT) and its administration of the Davis-Bacon Act. It was found that most training in open-shop construction is carried on by large contractors in programs tailored to individual needs or by associations of open-shop contractors. Very few of these programs have been approved by BAT, which has shown a strong preference for traditional programs run by joint labor-management committees. Refusals to register a program have placed a heavy financial burden on organizations sponsoring new and innovative training programs, since Davis-Bacon regulations permit only workers in registered apprenticeship programs to be paid training wages (less than the established journeyman minimum). It was recommended that (1) BAT reexamine its policies concerning approval of craft-training programs, since current procedures deny approval to non-union or independent training programs; and (2) the administration of prevailing wage laws should be changed to recognize that much construction work does not require all the skills of a journeyman, but rather of a helper or subjourneyman. (YLB)

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GOVERNMENT LIMITATIONS ON TRAINING INNOVATIONS

A CONSTRUCTION INDUSTRY COST EFFECTIVENESS PROJECT REPORT

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SUMMARY

Most people think of craft training in construction as apprenticeship in one of the roughly fifteen specialized crafts that provide the skills required by the industry. The little recognized fact is that fewer than a third of all construction craft workers, including those who are members of unions, learn their trade through apprenticeship.

Under the 1937 National Apprenticeship Act, apprenticeship in the union sector is administered through joint labor-management committees running programs approved by the U.S. Department of Labor's Bureau of Apprenticeship and Training (BAT). Training in open-shop construction is carried on largely by large contractors in programs tailored to their individual needs or by associations of open-shop contractors. Very few of these programs have been approved by BAT which has shown a strong preference for traditional programs run by joint labor-management committees.

Under the controversial Davis-Bacon Act, the Department of Labor sets prevailing wage rates for construction workers on federally financed or federally assisted projects, which account for at least one third of all construction. Apprentice rates are approved for those registered in BAT programs; all other work must be paid at the journeyman rate. Primarily because of the way these two laws have been administered, very little government-aided construction has been done by open shop contractors, although by some estimates open-shop construction now accounts for some 60% of the nation's total. In the unionized sector, the use of helpers and trainees, which was common practice before the Davis-Bacon Act was adopted in 1931 essentially disappeared by the 1950's.

The study concludes that the Labor Department should direct BAT to re-examine its policies covering approval of craft-training programs. The nation's overriding need to avoid waste of manpower and money requires that *all* appropriate training options should be fully used and all should have a fair opportunity to meet training needs in construction. Current procedures for registering craft-apprenticeship programs operate unfairly so as to deny approval to non-union or independent training programs. These procedures need to be critically examined to assure that all programs meeting appropriate criteria are approved *regardless of their sponsorship*.

The administration of prevailing wage laws (at both federal and state levels) needs to be changed to recognize that much work on construction projects does not require all the skills of a journeyman. The use of helpers and/or sub journeymen remains an essential and substantial part of any cost-effective construction crew. The Labor Department should recognize that such workers often work independently with the tools of the trade, not under the direction of or assisting a journeyman. These administrative changes could be put into effect without amending existing prevailing wage laws.

II

THE PROBLEMS AND THEIR HISTORY

Too few individuals understand how the Labor Department seriously impedes the use of modern skill training methods in construction. The Department does so through the combined effect of the regulations promulgated by its Bureau of Apprenticeship and Training and its administration of the Davis-Bacon Act. Labor Department regulations covering apprenticeship also influence the actions of state apprenticeship councils, and the federal Davis-Bacon Act has helped to foster enactment of "little Davis-Bacon Acts" which now exist in some (41) states. This report examines how these regulations affect craft training, and recommends changes to make construction training more cost effective.

The construction industry is the nation's largest employer. In normal years, more than four million skilled and semi-skilled workers are engaged simultaneously in construction. As many as six to seven million are generally employed in construction at some time during the year. How this large segment of the nation's labor force is trained and used has enormous impact, not only on the construction industry, but also on the entire U.S. economy.

European settlers brought craft training in the building trades to America in colonial days. At that time, the training reflected the traditional apprenticeship system, in which young men were indentured to a craftsman or an organization of craftsmen and learned on the job until they became proficient enough to attain the status of craftsmen or journeymen.

For centuries, while America became first a nation and in time a world power, apprenticeship programs were left to individual crafts or craftsmen. During the depression of the 1930's efforts to retrain and re-employ workers gave the federal government its first role. The National Apprenticeship Act of 1937, more often called the Fitzgerald Act, still remains the basic federal law about apprenticeship and training. The intent of the law is that apprenticeship systems should be established and conducted on a voluntary basis by labor and management, with promotional and technical assistance provided by the Labor Department.

The Act established an Office of Training Services within the Labor Department and gave it responsibility for administering the law. The Office has changed names several times and was transferred to various other federal agencies before being returned to the Labor Department in 1945. In 1956, by order of the Secretary of Labor, the organization was restructured and renamed the Bureau of Apprenticeship and Training (BAT).

In recent years, the thrust of federal policy affecting apprenticeship and training has been more the result of court orders and attempts to conform with requirements of other laws than the result of new apprenticeship legislation or amendments to the Fitzgerald Act. However, the impact of the Fitzgerald Act has been broadened by Labor Department regulations promulgated without any congressional instructions.

The Davis-Bacon Act was adopted in 1931 as an attempt to protect local contractors and employees from an influx of outsiders who were willing to work for less than the locally "prevailing wage", thereby obtaining what little government construction was being done at the time. Davis-Bacon requires that all construction workers on federally financed, or federally assisted construction be paid the "prevailing rate" for their work in the relevant locale. More often than not, the union scale has been determined to be the "prevailing rate". Such workers as helpers, trainees and sub journeymen, who made up a large part of construction crews for decades before the Davis-Bacon Act, were excluded from the wage categories set in the regulations under the act. Their use by union contractors has all but disappeared. Since roughly a third of all construction is at least partly financed by federal funds, subject to similar restrictions, union practices have come to prevail on matters well beyond wages particularly in the realm of training. As a result, the use of lesser skilled workers on federally financed construction work is usually limited to those already enrolled in union apprentice programs. This has im-

posed serious limits on the use of innovative training techniques, notably those that let individuals advance to higher levels of classification and pay in line with skills acquired rather than time served.¹

III

CURRENT STATUS

How the Study Was Made

The study team for this research included contractors with lengthy involvement in apprentice training, training directors of major contractor associations whose memberships do both union and open-shop construction, a former Department of Labor official with broad responsibility in training, and representatives of several construction users and user groups.

Early in the study it became obvious that most users are neither involved nor well-informed about the construction industry. Even large companies that do extensive in-house training have almost no training personnel with a fundamental knowledge of how craft apprenticeship is carried out, or of the concepts involved. The study relies heavily on published material and insights brought to it by the several contractors and contractor-association representatives.

Scope of the Industry

Construction is an extraordinarily complex industry. A multiplicity of crafts and contractors build residential, commercial or industrial projects. Some 60 separate construction crafts and skills are recognized by the Bureau of Labor Statistics in its industry/occupation statistics. In organized labor, these are represented by some 15 building and construction trades unions.

In each craft, there is a wide range of work requiring a wide range of skills. Much work in all crafts demands a high degree of skill, training and experience. But also much of the work in all crafts requires little skill or, at best, skill in a limited area, which can be easily and quickly learned.

¹This subject is discussed in more detail in a companion report, "*Subjourneyman in Union Construction*", The Business Roundtable, 1982.

Training in Union Programs

The building trades unions and contractors, through collective bargaining agreements have created joint-apprenticeship committees, thus perpetuating the centuries-old apprenticeship system for training craftsmen. Labor and management share in the administration of the training in varying degrees, but union membership is always a prerequisite for an individual to enroll in a program. The training can last from three to five years, depending on the craft, and covers nearly all facets of a given trade. Pay for apprentices generally starts at about half the journeymen rate and increases at predetermined intervals during apprenticeship, presumably reflecting increased skill and experience until journeyman status is reached.

Apprenticeship is usually perceived as the major entry route for construction craft employment, but the extent varies widely among individual trades. A 1964 Department of Labor Study², reported these percentages of journeymen had learned their craft through formal apprentice training:

Electricians	73%
Sheet metal workers	71%
Plumbers and pipefitters	55%
Brickmasons, stonemasons & tilers	45%
Carpenters	31%
Painters	28%
Cranemen, derrickmen & hoistmen	18%
Excavation, grading & road machinery operators	11%

A 1975 Department of Labor Study³, reported somewhat different percentages of workers who had completed formal apprenticeship programs:

Bricklayers	61%
Plumbers & pipefitters	61%
Sheet metal workers	57%
Electricians	56%
Carpenters	39%
Ironworkers	25%

²Department of Labor, Manpower/Automation Research Monograph No. 2, 1965 "Formal Occupational Training of Adult Workers".

³Department of Labor, Manpower R&D Monograph No. 39, 1975, "Training and Entry into Union Construction".

The long term impact of apprenticeship training reaches much further than is commonly supposed. As Dr. Quinn Mills observes in his book, *Industrial Relations and Manpower in Construction*: "Apprenticeship appears to supply a core of key journeymen, foremen, supervisors, and even contractors in most trades. In this sense, it can be as much a management training mechanism as a means of training the workforce itself." Thus, it tends to build in construction management a strong support for traditional programs and resistance to innovation.

Non-union Training Programs

Training non-union construction workers is far less structured. It ranges from almost no formal program to highly organized efforts of several large construction companies. A few companies run apprenticeship programs that are almost identical to those offered by joint labor-management committees of unionized construction.

An important difference between labor-management apprenticeship programs and the training done by open-shop contractors and their associations is the greater use of *task training* by non-union employers. Like many other industries, construction has become increasingly specialized. Training of workers merely to accomplish specialized tasks has, in many instances, proven to be more efficient and economical for specific projects than the broader training offered by traditional apprenticeship programs. Trainees can reach necessary levels of skill much faster when they concentrate on specialized tasks. The broad knowledge and abilities learned more slowly through traditional apprenticeship are not required by every member of the workforce.

Department of Labor Certification

Whether a union is involved or not, the Department of Labor sets minimum national training standards and certifies apprenticeship programs. This is done through its Bureau of Apprenticeship and Training (BAT) or by a State Apprenticeship Council (SAC) recognized by the Department of Labor and empowered to implement BAT standards.

Historically, the Department has supported almost exclusively the traditional apprenticeship methods of construction training. This limits apprenticeship programs to narrowly defined crafts. Other construction training programs, such as those emphasizing task-training or shorter apprenticeship periods, do not receive approval or certification. Recently, BAT has been willing to register programs that operate outside the realm of collective bargaining, but only if they

follow traditional concepts. BAT has proved reluctant to register apprentice programs for new skills or combinations of skills and crafts.⁴ State apprenticeship councils have been reluctant, as a rule, to register any open-shop apprenticeship programs.

BAT refusal to register a program places a heavy financial penalty on organizations that sponsor new and innovative training programs. This follows from the fact that the Labor Department enforces the Davis-Bacon regulations which permits only those workers in registered apprenticeship programs to be paid training wages, that is, less than the established journeyman minimum for a given craft. The Labor Department consistently establishes the prevailing minimum wage as that of a journeyman, so the cost of using apprentices or trainees on federal construction is significantly higher for contractors who do not participate in traditional apprenticeship programs. Open-shop contractors consider themselves victims of a kind of "Catch-22". All employers, unionized or not, may create apprentice programs; if registered by BAT the programs enable contractors to pay an apprentice wage rate to a small fraction of the workers in each trade. However, BAT has routinely refused to register programs which do not conform to the traditional craft skills as defined and controlled by collective-bargaining agreements. As a result, non-union programs usually do not receive BAT registration and "unregistered" employers often avoid federal or federally-assisted work.

As has always been true, the demand for construction labor is dependent on the demand for construction services, and construction demand is extremely variable, heavily influenced by national, regional, and local economic conditions. The amount of training done in any locale is influenced both by the structure of the existing workforce, and by the current unemployment level locally in that craft. These variables often produce simultaneous labor surpluses and labor shortages in different regions. These fluctuations compound the difficulties under which existing training and apprenticeship programs struggle to produce the number of trainees needed for the industry.

⁴Recently the Bureau of Apprenticeship and Training has approved an informal classification of "Metal building assembler".

IV

CONCLUSIONS

There is a real need to encourage more people to enter the construction trades, and to provide them with meaningful and relatively quick training. According to the Dept of Labor,⁵ 900,000 new jobs will be created for construction craftworkers by 1990. In addition, 1.5 million vacancies will occur by workers leaving the industry due to retirement or transfer to other industries. Thus a total of 2.4 million new construction craftworkers will be needed by 1990. Present programs are graduating only an average of 50,000 craftsmen per year. If the present rate of training is maintained over the next 10 years, a severe shortage of construction workers (1,900,000) will result.

The nation's historic apprenticeship system has been a valuable asset to the construction industry. It has produced broadly-trained, highly-skilled journeymen and many of the industry's supervisors. It is not, however, sufficiently flexible to accommodate the highly volatile manpower demands and training needs of local construction markets.

The Bureau of Apprenticeship and Training and State Apprenticeship Councils' policy of approving only traditional apprenticeship programs is outdated and not in keeping with the needs of the industry. It favors inefficient training, inhibits training innovations, and restricts training in the open shop sector. Davis-Bacon requirements are used to enforce this policy on federally-supported construction projects.

Most construction workers need initial proficiency in only a few marketable skills. Additional training can be dependent on individual ability, motivation, and the market demand for new or different skills, or for more broadly-trained workers.

It is incumbent on the construction industry to develop and support training systems which will provide an adequate supply of qualified workers in the most expeditious and economical manner.

⁵Department of Labor Annual Construction Industry Report April 1980.

V

RECOMMENDATIONS

The Construction Industry Cost Effectiveness Task Force makes these recommendations, most, if not all of which can be put into effect through administrative changes without need for new legislation.

Union contractor organizations in cooperation with the building trade unions through their joint-apprenticeship committees should:

- Modernize the traditional system of apprenticeship training within each craft, but retain this means of developing base cadres of broadly trained journeymen.
- Employ training techniques, course content and schedules which promise advancement based on proven skills developed, not on length of training.
- Conduct such training off-site but with each apprentice utilizing on-site time to apply knowledge gained and get additional experience while performing productive work.

The Department of Labor, Bureau of Apprenticeship and Training should:

- Critically examine their current procedures for registering construction apprenticeship programs, giving due consideration to the changing technology and techniques used in modern day construction practice.
- Provide for task-oriented training to satisfy local market needs through the development of those skills needed for the job at hand, including helpers and sub journeymen as well as formal apprentices in the programs.
- Certify and register all apprenticeship and training programs meeting appropriate criteria without regard to sponsorship of the program.

The Department of Labor and the several states having prevailing wage laws should:

- Review their procedures to take cognizance of the fact that much of the work on today's construction projects does not require the full skills of a journeyman.
- Provide means by which helpers or subjourneymen as well as apprentices can be an essential and substantial part of a cost effective construction crew.
- Recognize that such workmen often work independently with the tools of their trade, not necessarily under the direction of or assisting a journeyman.

CONSTRUCTION INDUSTRY COST EFFECTIVENESS PROJECT

This Project is a long-range, four-phase effort to develop a comprehensive definition of the fundamental problems in the construction industry and an accompanying program for resolution of those problems leading to an improvement of cost effectiveness in the industry. It is focused primarily on improvement in the industrial, utility, and commercial segments of the industry and has been developed from the point of view of owners or users of construction. Efforts by all segments of the industry, however, are vitally necessary if major improvement is to result.

This report is one of a series of reports from study teams researching individual problem areas. The report series includes:

Project Management — Study Area A

- A-1 Measuring Productivity in Construction
- A-2 Construction Labor Motivation
- A-3 Improving Construction Safety Performance
- A-4 First and Second Level Supervisory Training
- A-5 Management Education and Academic Relations
- A-6 Modern Management Systems
- A-7 Contractual Arrangements

Construction Technology — Study Area B

- B-1 Integrating Construction Resources and Technology into Engineering
- B-2 Technological Progress in the Construction Industry
- B-3 Construction Technology Needs and Priorities

Labor Effectiveness — Study Area C

- C-1 Exclusive Jurisdiction in Construction
- C-2 Scheduled Overtime Effect on Construction Projects
- C-3 Contractor Supervision in Unionized Construction
- C-4 Constraints Imposed by Collective Bargaining Agreements
- C-5 Local Labor Practices
- C-6 Absenteeism and Turnover
- C-7 The Impact of Local Union Politics

Labor Supply and Training — Study Area D

- D-1 Subjourneymen in Union Construction
- D-2 Government Limitations on Training Innovations
- D-3 Construction Training Through Vocational Education
- D-4 Training Problems in Open Shop Construction
- D-5 Labor Supply Information

Regulations and Codes — Study Area E

- E-1 Administration and Enforcement of Building Codes and Regulations

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